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PROPOSAL FOR ESTABLISHMENT OF PROTOTYPE OCCUPATIONAL AND RESEARCH DEVELOPMENT COORDINATING UNIT.

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THE RESEARCH COORDINATING UNIT (RCU) WAS ESTABLISHED IN AUGUST 1965, IN ORDER TO STIMULATE AND CONDUCT RESEARCH IN VOCATIONAL EDUCATION. ITS BASIC OBJECTIVES WERE TO (1) INITIATE, STIMULATE, ASSIST, AND COORDINATE RESEARCH ACTIVITY IN AND AMONG EDUCATIONAL AGENCIES, (2) CONDUCT RESEARCH INDEPENDENTLY OR IN CONJUNCTION WITH OTHER APPROPRIATE AGENCIES, (3) DISSEMINATE THE FINDINGS OF RESEARCH CONDUCTED BY THE RCU AND OTHER AGENCIES, (4) ESTABLISH EXPERIMENTAL AND DEMONSTRATION PROGRAMS, AND (5) APPLY RESEARCH FINDINGS THAT HAVE UNDERGONE ACCEPTABLE FIELD TESTING. THE 11 PROPOSED AND COMPLETED PROJECTS INCLUDE (1) A SURVEY OF COLLEGE COURSE OFFERINGS AND CERTIFICATION REQUIREMENTS RELATIVE TO VOCATIONAL EDUCATION, AND (2) A STUDY OF THE RELATIONSHIP BETWEEN VOCATIONAL EDUCATION AND THE JOB OPPORTUNITIES IN THE PETROLEUM INDUSTRY. THE RCU HAS (1) DEVELOPED A RESEARCH INFORMATION RETRIEVAL AND DISSEMINATION SYSTEM, (2) ESTABLISHED A RESEARCH CONSULTING SERVICE FOR LOCAL SCHOOLS AND SUPERVISORS OF THE STATE DEPARTMENT OF PUBLIC INSTRUCTION, (3) INITIATED AND PARTICIPATED IN WRITING SEVERAL PROJECTS SUBMITTED TO FEDERAL AGENCIES FOR FUNDING, AND (4) CONDUCTED RESEARCH PROJECTS DESIGNED TO STRENGTHEN "BASE-LINE" DATA FOR VOCATIONAL PLANNING. (SL)

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FINAL REPORT

Contract No. OE 5-85-123

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PROPOSAL FOR ESTABLISHMENT OF PROTOTYPE OCCUPATIONAL AND RESEARCH DEVELOPMENT COORDINATING UNIT

Contract No. OE 5-85-123

James F. Watkins
Acting Director

March 15, 1967

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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Introduction

The Research Coordinating Unit of the Montana State Department of Public Instruction was established in August, 1965, under a contract authorized by the Commissioner of Education of the United States Office of Education. Continuation of the Unit after the expiration of the original support allocation from the Vocational Education Act of 1963 was provided by a second contract from the Bureau of Research for a nineteen month period to terminate on September 30, 1968.

The purpose of the Research Coordinating Unit was to stimulate and conduct research in vocational education. This prototype research unit was to form the nucleus around which a permanent research program within the Montana State Department of Public Instruction could be developed.

Prior to the Research Coordinating Unit attaining operational status on August 1, 1965, no organized effort had been made to promote vocational-technical education within the State of Montana. The Research Coordinating Unit provided the means to gather, analyze, synthesize and understand "base-line" data essential to the development of sound vocational education planning. The Unit also permitted the dissemination of information and ideas preparatory to the implementation of programs. The Research Coordinating Unit, then, proved to be the "vehicle" needed to overcome monetary deficiencies and undeveloped interest so that vocational training might become a reality for more than just a very small number of youth presently enrolled in our schools.

At the time that the Research Coordinating Unit was initially funded, local school districts were just beginning to receive monies from the Vocational Education Act of 1963. Vocational education was on the verge of its first real expansion in Montana in a number of years. The provision for a Research Coordinating Unit was both timely and necessary. A means was thus provided to coordinate the efforts of educators to develop vocational-technical education courses that would be compatible with the needs of Montana industry for trained workers, and with the interests and desires of Montana youths who were not college bound and therefore in need of a marketable labor skill.

The Research Coordinating Unit has undergone three major stages of development during the first nineteen months of operation.

The initial stage was organizational in nature. The Unit was made a part of the Research and Development Group. This is one of five departmental divisions: Instructional Services; Financial, Statistical and Information Services; General Services; and Administrative Services. Operating as a pilot program, the Research Coordinating Unit was charged primarily with serving the Vocational Education Section of the Division of Instructional Services. The sub-divisions of the Vocational Education Section are: Agricultural Education, Manpower Development and Training Act, Business and Distributive Education, Home Economics Education, Technical Education, Trade and Industrial Education, including Fireman Training, Vocational Guidance, and Work Study.

A five-person staff was developed for the following positions: Research Coordinating Unit Director, Educational Research Coordinator, Occupational Research Coordinator, Research Assistant and Research Coordinating Unit Secretary.

The second phase of operation was primarily concerned with establishing a professional relationship with personnel necessary to the development of a functioning and meaningful program of operation. This included persons from the following organizations: the Vocational Education Section of the Montana State Department of Public Instruction, the public and private colleges and universities in the state, the private and public elementary and secondary schools in the state, the teacher organizations, the Research and Analysis Unit of the Unemployment Compensation Commission, the Montana State Employment Service, the local divisions of the Office of Economic Opportunity throughout the state, and industries, businesses and labor unions.

The third phase of the Research Coordinating Unit was the actual conduct of those activities deemed necessary to the fulfillment of the program's objectives.

This third phase has resulted in the present operational framework in which the Research Coordinating Unit performs as the following:

(1) An educational research retrieval and dissemination center.

(2) A consulting service for local school districts in planning and implementing vocational-technical programs.

(3) A research unit to gather, analyze, synthesize and report relevant research findings.

(4) A source of aid in initiating and drafting proposals for submission to private businesses, foundations and government agencies such as the Bureau of Research of the U. S. Office of Education.

The Research Coordinating Unit believes that its efforts have accelerated the interest in vocational education in Montana and that it has made a contribution to the planning and orderly expansion of programs based on accurate, relevant and current data.

Objectives

Being cognizant of the utmost importance of having an adopted set of flexible objectives to guide program activities, Unit personnel have been intent upon delineating a plan for action. The objectives that are presented in this report were developed throughout phases one, two and three of the Unit's operation. Modification is expected throughout the second period of operation.

I. Initiate and stimulate research activity in and among educational agencies.

   A. Determine areas of needed research and bring these to the attention of appropriate agencies.

   B. Identify potential individual researchers.

   C. Assist individuals and agencies in drafting proposals.

   D. Assist in selecting sources of research funds.

   E. Participate in the criticism of research proposals to be submitted for funding.

II. Assist educational agencies and individual research activities.

   A. Assist, when appropriate and feasible, with the actual conduct of research.

B. Locate key resource personnel as consultants in local research programs.

C. Aid researchers in the design and conduct of evaluation procedures for ongoing research projects.

D. Help researchers obtain needed facilities.

III. Coordinate research activity among educational agencies.

A. Act as a clearing agency to avoid duplication.

B. Encourage cooperation between agencies, both interstate and intrastate, doing related research.

C. Encourage research projects involving more than one school district.

D. Act as liaison between community action groups and school districts conducting research for socio-economically deprived students.

E. Promote research cooperation between educational agencies, business, industry and labor.

IV. Conduct research independently or in conjunction with other appropriate agencies.

A. Cosponsor research with colleges and universities.

B. Cosponsor research on local levels in applied situations.

C. Undertake research projects with state-wide significance when appropriate.

V. Disseminate the findings of research conducted by Research Coordinating Unit and other agencies.

A. Obtain reports of ongoing and completed research projects.

B. Edit and publish pertinent research findings for state-wide distribution.

C. Conduct meetings and conferences for dissemination of research results.

D. Establish pilot programs in cooperating school districts.

VI. Establish experimental and demonstration programs.

A. Assist colleges and districts in cooperatively conducting experimental and demonstration programs.

B. Aid school districts in establishing programs to test new concepts and methods.

C. Help colleges and districts evaluate innovative field testing.

VII. Apply research findings that have undergone acceptable field testing.

A. Assist college personnel in becoming cognizant of successful, innovative programs.

B. Aid local school personnel in recommending and effecting warranted changes in curriculum design.

C. Aid local school officials in revisions of school programs.

D. Disseminate findings with classroom application.

Method

The following procedural description is presented according to the four major functions of the Research Coordinating Unit: (1) educational research retrieval and dissemination, (2) consulting services, (3) research proposal development services, and (4) conduct of research. Each is separately described although they are all part of an integrated operation to provide support to vocational education in Montana through research.

1. Research Information Retrieval and Dissemination Service

Research information available to state supervisors and local school districts consists of three types:

(a) Information concerning sources of research funds, both Government and private, has been assembled by the Research Coordinating Unit and made available on request to resource persons planning research projects. Every effort is made to keep this information current, including the status of funds available from each source.

(b) A bank of up-to-date research information is kept by the Research Coordinating Unit including listings of material available from such places as the Department of Public Instruction library, the Montana State Library, units of the Montana University System, the U. S. Office of Education, Centers for Research in Vocational-Technical Education, Regional Laboratories, ERIC and other federal and state programs such as ESEA. . .

(c) Current occupational information resulting from Research Coordinating Unit efforts or in conjunction with vocational planning efforts by local school districts for dissemination both interstate and intrastate to interested school and research units.

The above-listed categories represent data which is collected and filed as a regular Research Coordinating Unit function. Dissemination is conducted according to the procedures discussed in the succeeding explanation.

Several periodic newsletters and bulletins are published by the Vocational Education Section and other divisions of the Department of Public Instruction. The Research Coordinating Unit has used these media to disseminate research information rather than publishing a separate bulletin.

A special listing of recent and pertinent ongoing research is being compiled and distributed to all supervisory personnel. This includes the following:

(a) Agency performing the research, sponsor, source of funds for the project.

(b) Name of the researchers participating.

(c) Name of the research project.

(d) Purposes and procedures of the study.

(e) Findings, when available.

As an adjunct to the above report, a monthly bulletin on intrastate research related to vocational education is compiled and multilithed for supervisors and other interested vocational educators. Information in this bulletin is reported in abstract form and includes:

(a) Agency performing the research, sponsor and source of funds supporting the project.

(b) Name of the project.

(c) Names of researchers participating.

(d) Other pertinent information as appropriate concerning the nature of the study, progress which may be reported, findings, etc.

2. Consulting Services

The Research Coordinating Unit has developed three areas of specialization in which the consulting services have been made available to vocational educators throughout the state.

(a) Community surveys

To help insure that the new area vocational school course offerings were compatible with occupational opportunities and the career decisions of past and prospective students, the Research Coordinating Unit designed a three-phase approach to vocational education course planning which included: (1) an occupational survey of local and area jobs, (2) a follow-up study, and (3) a student interest survey based on occupational and follow-up information. Research Coordinating Unit personnel are available for consultation in each area of the survey.

(b) ESEA projects

The Research Coordinating Unit has made an effort to bring to the attention of local administrators the fact that ESEA monies can be expended for vocational-technical education. The resources of the Unit have been offered in the development of both Title I and Title III proposals.

(c) Program evaluation

The Research Coordinating Unit has developed procedures for evaluating new and continuing vocational programs including vocational guidance. The purpose is, of course, to encourage program improvement.

In addition to vocational-technical programs in public schools, assistance has been given to those concerned with the conduct of MDTA programs.

3. Research Proposal Development Services

Very often in the past, researchable ideas in vocational education did not progress beyond the idea stage because of a lack of knowledge and time necessary to the development of research proposals. The Research Coordinating Unit has been able, at least in part, to help fill this gap. Information has been given regarding proposal format and research design. Help has been provided in ascertaining appropriate statistical methodology. The Research Coordinating Unit has even helped conduct a review of literature for potential researchers as well as directly assisting with the drafting of a proposal.

The Research Coordinating Unit has made an effort to locate sources of funding for unsolicited research proposals from private businesses, foundations and government agencies. The current shortage of Vocational Education Act of 1963 Section 4(c) funds has made this search imperative so that the recently developed interest and impetus in vocational research will not be lost.

4. Conduct of Research

The trend of area schools to specialize in training certain occupational clusters has necessitated state-wide surveys of

individual industries. The Research Coordinating Unit, as a centralized state agency, has been able to adequately meet this need.

Persons concerned with the development of vocational-technical education in Montana have had a need for state-wide or regional information on which to base decisions. At the request of the State Director of Vocational Education, the Research Coordinating Unit has conducted research, primarily the survey type, to obtain the information important to the planning and implementation of vocational programs.

Results

I. Information Retrieval and Dissemination

The Research Coordinating Unit has attempted to develop a basic information retrieval system that could be utilized by all persons interested in the findings as well as in the conduct of research.

Initially, the Unit obtained a basic library of highly pertinent books and periodicals. This has been systematically added to by the requisition of free and inexpensive materials from government and private sources.

A microfiche library has been instituted within the Research Coordinating Unit. Presently, material relating to the "Disadvantaged Youth" has been received and catalogued. The Unit maintains a microfiche reader for use by persons desiring to explore this resource material.

Limited financial arrangements have precluded the development of an extensive resource center; therefore, the materials readily available in other agencies have been listed in a comprehensive guide to sources of published and unpublished materials.

The Research Coordinating Unit has disseminated information through a variety of existing bulletins issued by or through the Montana State Department of Public Instruction. Reliance on these publications has permitted the Unit to conserve staff time that would have been utilized in publishing a separate newsletter.

The success of this method is readily apparent from the widespread interest in vocational education manifested in recent

months throughout the state on both the local and state levels. Specific examples include the conduct of a cooperative research program in fourteen counties, the submission of research proposals by four Montana colleges and universities, the vocational surveys conducted by eight major communities, the numerous applications for area vocational school designation that have been submitted to the State Board of Education, and the interest displayed by the Fortieth Legislative Assembly in attempting to provide for vocational-technical education.

II. Consulting Services

Research Coordinating Unit personnel are serving as consultants on numerous projects, including two major ESEA Title III planning grants:

(a) Northern Montana Elementary and Secondary Education Act Association Planning Project

(b) North Central Montana Area Vocational School Planning Project

The Northern Montana Elementary and Secondary Education Act Association Planning Project is an attempt on the part of rural counties to pool their resources for educational planning which includes vocational planning. Follow-up studies and student interest surveys were coordinated through Research Coordinating Unit efforts, with studies being done or planned in other areas of the state.

The North Central Montana Area Vocational School Planning project is a planning effort for vocational education in sparsely populated areas and presented the Research Coordinating Unit with an opportunity to gather information valuable to large areas of Montana. The project director worked closely with the Research Coordinating Unit to insure that information gathered was pertinent to Research Coordinating Unit efforts throughout the state. At this time, we are assured that all information and findings of this planning grant are relevant to problems in vocational education state-wide.

With the advent of the Vocational Education Act of 1963, several local school districts indicated an interest in obtaining designation as an area vocational school. As these expressions of interest

were forwarded to the Director of Vocational Education, the Re-Search Coordinating Unit offered their services as consultants in gathering the data necessary for the application for area school designation. To date, four applications based on data gathered with Research Coordinating Unit assistance have been submitted to the State Board of Vocational Education requesting area school designation. Supplementary to the area school applications has been an increased interest in vocational education state-wide among school administrators, employers, students and parents.

Consultive assistance has been given to school districts evaluating their ongoing vocational programs and assisting in evaluation planning of proposed programs. Research Coordinating Unit personnel have given consultive assistance in the writing of the evaluation sections of ESEA Title I and Title III projects.

Project Writing

The Research Coordinating Unit has initiated and participated in writing several projects submitted to federal agencies for funding. These were generally submitted to the Bureau of Research; however, projects have been written for ESEA Title III, MDTA evaluation, Administration on Aging and U. S. Department of Labor. Four projects initiated and written by the Research Coordinating Unit personnel have been funded to date with the research completed on one.[1]

Project writing involves a diversified effort which is complimented by the other facets of Research Coordinating Unit activities. It involves close contact with personnel from the Greater Montana University System and is more sophisticated in scope than the "in-house" research projects associated with industries and school districts. This phase of Research Coordinating Unit activities has resulted in developing research design competencies on the part of Research Coordinating Unit staff members and establishing working relationships with university personnel having research abilities and experience.

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1 An Action Research Project to Investigate Characteristics, Background and Job Experiences of Successful and Unsuccessful Entry Workers in Three Selected Industries

The Research Coordinating Unit cannot be maintained and expanded entirely by appropriated funds. We must maintain momentum in obtaining additional monies through funding worthwhile projects if the Research Coordinating Unit is to reach the goal of becoming an established research unit in the Department of Public Instruction. Project writing, while not the only major effort of the Research Coordinating Unit, will certainly be continued as a part of the Research Coordinating Unit's activities.

Research Conducted by the Research Coordinating Unit

The Research Coordinating Unit completed the following projects during the initial contract period:

Rationale for Vocational Technical Education in Montana

Survey of Selected State Legislation in Support of Vocational Education Act of 1963

Compilation of Abstracts of Theses and Dissertations Completed at Montana Colleges in Education and Related Fields for the Period of 1955-1965

A Survey of College Course Offerings and Certification Requirements Relative to Vocational Education

Report of the Pre-Electronics Technical Education Program at Powell County High School

Employment Opportunities Survey for the Horticulture, Floriculture and Nursery Industries

Projects contemplated or presently being conducted by the Unit include:

Occupational Study of the Grain, Feed, Seed and Related Farm Supply Services

Teacher Aide Survey

Employment Opportunity Survey of the Forestry, Lumbering and Related Industries in Montana

An Analysis of Montana Educational Needs in the Areas of Heavy Equipment Maintenance and Operation

A Study of the Relationship Between Vocational Education and the Job Opportunities in the Petroleum Industry

"In-house" research is carried out primarily to compliment efforts to expand vocational-technical education in Montana and insure that planning is accomplished in accordance with the projected labor demands of industry as well as in the best interests of the students.

Discussion

The formation and functioning of the Research Coordinating Unit in Montana has brought to the attention of knowledgeable persons in our state certain basic weaknesses in our total vocational program. The most serious deficiency seems to be the lack of a well-developed and coordinated state plan for expanding area vocational schools. A second major problem is the lack of communication between industry and vocational education leaders on the local and state levels.

In working with local directors on occupational surveys, Research Coordinating Unit personnel interviewed a relatively large number of employers who had never been contacted by vocational counselors for information on skilled worker shortages or job skill requirements in their specific industries. Research Coordinating Unit personnel working in this area stimulated an interaction between employers and local vocational directors. Follow-up studies were initiated by the Research Coordinating Unit to indicate occupations available both interstate and intrastate to the non-college graduate. This effort needs to be expanded and a job information retrieval system on a current basis should be organized.

Research projects of national scope conducted by universities and centers have supplied much needed data; however, in Montana such information has been difficult to utilize due to a lack of the most basic of planning. The Research Coordinating Unit has instituted programs in schools with area school designation or those seeking such designation to maintain current information on available jobs, student interest, occupational need projections and follow-up.

Planning on a state level has been slower to materialize. The principal obstacle to centralized planning has been lack of funds. The Research Coordinating Unit is presently attempting to ascertain the feasibility of synthesizing data collected by local districts and the Montana State Employment Service into a state-wide occupational information system which could be made available to all vocational educators and counselors.

The Montana Research Coordinating Unit would have been more effective if there had been money available to finance research by competent researchers in which the problems were related to specific problem areas. The Research Coordinating Unit contends that monies expended under the Vocational Education Act of 1963 Section 4(c) to universities has not always been of a utilitarian nature. In addition, the emphasis on research with generalizable findings does not always seem defensible.

This apparent dilemma of attempting to stimulate research which is fundable by the U. S. Office of Education, Bureau of Research, and still applicable to the basic planning phase of vocational education in Montana has resulted in more emphasis on in-house projects designed to complete "base-line" data for establishing area vocational schools.

The Research Coordinating Unit has established a leadership role in area school planning, the structured evaluation of vocational and adult education programs, and the development of an up-to-date retrieval system for occupational information.

Conclusions and Recommendations

The establishment of a Research Coordinating Unit in the Montana State Department of Public Instruction proved to be an important support to expansion efforts in vocational-technical education. In conjunction with the development of the Research Coordinating Unit's capabilities, the vocational education supervisory staff of the Department of Public Instruction recognizes need for additional information for planning purposes.

Local school districts are using the resources developed by the Research Coordinating Unit in planning both area school course offerings as well as improving ongoing programs. The Research Coordinating Unit has developed interstate contacts which give

the Department of Public Instruction and most school districts current information on innovative projects and research being conducted throughout the United States. These efforts by the Research Coordinating Unit have resulted in an awareness of the "big picture" of vocational-technical training needs and have alerted vocational counselors, administrators and students to the possibilities of training for national as well as local need. Through Research Coordinating Unit efforts, resource persons from a multiplicity of disciplines in institutions of higher learning have become increasingly aware of the part vocational education plays in the total educational effort. Educators who were only academically oriented are becoming aware of the need for education, in its broadest sense, for the world of work which includes job competencies. The Research Coordinating Unit has succeeded in interesting large companies in the effort to expand vocational technical education in Montana and is progressing toward the welding of a business, education and labor participation in vocational education.

Findings of the Research Coordinating Unit investigations of vocational technical education needs indicate that a stronger vocational guidance program should be initiated to compliment occupational data gathered by local school districts. Efforts in vocational guidance should include more emphasis on placement activities and a stronger follow-up program of vocational school graduates for evaluative purposes. Research efforts should be pointed toward specific problems of worker shortages and student interest in combination with a strong general education program. Personnel on a state supervisory level should insist on cost-benefit analysis studies to supplement information on occupational shortages prior to instituting new programs. Efforts should be made to incorporate research conducted for general education with research findings in vocational education to compliment the total educational effort.

Summary

The Research Coordinating Unit was established as a prototype research unit within the Montana State Department of Public Instruction to form the nucleus around which a permanent research unit would be established. To fulfill this overall objective the Research Coordinating Unit has accomplished the following:

(1) Initiated research for vocational technical education funded under Section 4(c) of the Vocational Education Act of 1963.

(2) Developed a research information retrieval and dissemination system.

(3) Established a research consulting service for local schools and supervisors of the Department of Public Instruction.

(4) Conducted research projects designed to strengthen "base-line" data for vocational planning.

Basic planning data for vocational education planning developed by the Research Coordinating Unit has been supplemented by "in-house" projects to fill specific informational gaps. To supplement research funds, the Research Coordinating Unit has developed contacts with public and private organizations outside normal educational channels for research monies. The Research Coordinating Unit hopes to provide the research resources necessary to support vocational planning and evaluation.